

Amendments to the Specification

On Page 1, line 5, Under the Title, Replace the Section Heading as follows:

~~STATE OF THE ART BACKGROUND OF THE INVENTION~~

On Page 1, beginning at line 6 and ending at line 18, Amend the Paragraph as follows:

In the case of a known wiper lever ~~of the type designated in the pre-characterizing clause of the independent claim~~, the supporting element of the wiper blade is supposed to guarantee the most uniform possible distribution of wiper blade application force originating from the wiper arm on the window over the entire wiper field being covered by the wiper blade. Because of a corresponding curvature of the unstressed supporting element—i.e., when the wiper blade is not adjacent to the window—the ends of the wiper strip that are applied completely to the window during wiper blade operation are stressed by the then tensioned supporting element on the window, even if the curvature radii of spherically curved vehicle windows change with every wiper blade position. The curvature of the wiper blade must therefore be somewhat greater than the greatest curvature measured in the wiper field on the to-be-wiped window. The supporting element thereby replaces the expensive supporting bracket design, which is required to distribute the application force, with two spring rails arranged in the wiper strip, which are used for transverse reinforcement of the rubber elastic wiper strip, as is the practice with conventional wiper blades (~~DE-PS~~German Printed Specification 1247 161).

On Page 1, beginning at line 19 and ending at line 29, Amend the Paragraph as follows:

In a known wiper lever in accordance with the species ~~of (R-39836 (PCT/DE01/04307))~~ the cap covering the articulated connection between the wiper arm and the wiper blade is locked exclusively by friction with the wiper blade. A special fixation of the cap in the longitudinal direction of the wiper blade is not provided. In order to keep the assembly time of the cap on the wiper blade—including the required determination of position—as short as possible, the dimension of the passage opening in the longitudinal direction of the wiper blade must be provided with a high plus tolerance so that the required smooth-running oscillating movement between the wiper arm and the wiper blade is not impaired. The gaps thereby yielded between wiper arm and the edge of the passage opening in the cap lead to undesired air stream noise and also interfere with the harmonic transition between wiper blade and wiper arm in the area of the articulated connection that is striven for with the arrangement of the cap.

On Page 1, line 31, Replace the Section Heading as follows:

~~ADVANTAGES OF THE INVENTION~~ SUMMARY OF THE INVENTION

On Page 1, beginning at line 32 and ending at line 36 and

On Page 2, beginning at line 1 and ending at line 3, Amend the Paragraph as follows:

In the case of the wiper lever ~~with the characterizing features of Claim 1 of the invention~~, the assembly of the cap on the wiper blade is simplified considerably, because the correct position of the cap is automatically defined due to the arrangement of at least two limit stops pointing in opposite longitudinal directions of the wiper blade, if the cap is provided with correspondingly embodied counter limit stops that cooperate with the limit stops on the wiper blade. The tolerance for the longitudinal dimension of the passage opening can be minimized as a result so that disadvantages can no longer be expected due to the now slight gap dimension between the wiper arm and the edge of the passage opening.

On Page 2, line 28, Replace the Section Heading as follows:

~~DRAWINGS~~ BRIEF DESCRIPTION OF THE DRAWINGS

On page 3, line 8, Replace the Section Heading as follows:

~~DESCRIPTION OF THE EXEMPLARY EMBODIMENTS~~ DETAILED DESCRIPTION

On Page 3, beginning at line 9 and ending at line 35 and

On Page 4, beginning at line 1 and ending at line 34, and

On Page 5, beginning at line 1 and ending at line 11, Amend the Paragraph as follows:

A driven wiper arm 12 that is guided on one end on a motor vehicle (not shown) is a part of the wiper lever 10 (~~Figure 9~~Figure 1) in accordance with the invention. The driven end of the wiper arm is provided with reference number 11 in Figure 1. Linked to the other, free end 14 of the wiper arm is a long-stretched-out wiper blade 16 that belongs to the wiper lever 10. The wiper arm 12 is positioned on its drive end 11 in such a way that, during wiper operation, it can swing back and forth between reverse positions around a pendulum axis 20 in a vertical plane on the drawing plane. In the process, the wiper blade 16 is moved transverse to its longitudinal extension over the to-be-wiped window, whereby it abuts the surface 28 of a to-be-wiped window with a rubber elastic wiper strip 24. The wiper strip 24 is longitudinally axially parallel with a band-like, long-stretched-out, elastic supporting element 30, on whose upper band surface 29 facing away from the window a component 32 sits

(Figures 3 and 5) via which the wiper blade 16 is connected to the wiper arm 12 in an articulated manner to form the wiper lever 10. The wiper strip 24 is therefore arranged on the lower band surface 31 of the supporting element 30 that faces the window. The component 32 whose cross-section is T-shaped in sections, and can also be designated as an articulated part, faces the supporting element 30 with its T-head 34 and grips around the outer longitudinal strips 40 of the supporting element 30 with claws 38 that are arranged on the T-head. The articulated part 32 is solidly connected to the supporting element 30 at these claws, for example, welded and/or fixed to it by squeezing the claws together. In the exemplary embodiment, the supporting element 30 includes two spring rails 42, which extend at least almost parallel to one other lying in a common plane. The supporting element is curved (Figure 1) over its band surfaces 29, 31 in such a way that the wiper strip 24 is situated on its concave curved band surface 31 and the articulated part 32 sits on the convex curved band surface 29 (Figure 1). The inner facing longitudinal strips 41 of the spring rails 42 lie in open-edged longitudinal grooves 44 of the wiper strip 24. The T-foot 36 of the coupling part 32 extends away from the supporting element 30 and is penetrated by an articulated bolt 46, whose two ends projecting out of the T-foot are visible in Figures 3 and 5. The wiper arm 12 (shown in a dot-dash line in Figure 3) engages at this articulated bolt or rather at its open ends with correspondingly embodied rest recesses. An adapter 48 that is preferably manufactured of a plastic is located between the T-foot 36 and the wiper arm 12 and this adapter guarantees an operationally reliable, detachable connection is between the wiper arm 12 and the wiper blade 16 that forms the wiper lever 10. Figure 3 shows that the articulated bolt 46 or rather its articulated axis 47 essentially extends in the direction of the pendulum motion or operating motion of the wiper lever 10. As Figure 1 shows, the to-be-wiped surface 28 of the window is curved. Since the line 28 is supposed to represent the greatest curvature of the window surface, it is clearly evident that the curvature of the as yet unstressed wiper blade 16, whose two ends 18 are adjacent to the window surface 28, is greater than the maximum curvature of the window. Under an application force exerted by the wiper arm 12 acting in the direction of arrow 22 (Figure 1), the wiper blade applies its rubber elastic wiper strip 24, arranged on the lower band surface 31 of the supporting element, over the entire length of the window surface 28. In doing so, tension builds up in the elastic supporting element 30 manufactured of metal and this tension is responsible for the proper application of the wiper strip 24 over its entire length on the window as well as for the uniform distribution of the application force 22. Moreover, the supporting element 30 with its spring rails ~~2442~~ is responsible for the required transverse stabilization of the rubber elastic wiper strip 24. Because the window, which is spherically curved as a rule, does not represent a section of a spherical surface, the wiper blade 16 must be able to constantly adapt vis-à-vis the wiper arm 12 during its wiper operation to the respective position and the progression of the window surface 28. As a result, a smooth-running articulated connection is required between the wiper arm 12 and the wiper blade 16 that makes an oscillating movement (double arrow 26 in Figure 1) around the pivot pin axis 47 possible.

In addition, Figures 1 and 4 show that the articulated axis 47 is also aligned transverse to the direction of the application force (arrow 22). Figures 1 and 2 show that the wiper blade is provided on the upper band surface 29 of the supporting element 30 with a wind deflector strip 50 that is connected for example with the wiper strip 24. The wind deflector strip has two partial sections 52 that lie at a distance 54 from one another as seen in the longitudinal direction of the wiper blade (Figure 1). This results therefore in a free space 56 in the wind deflector strip 50, which makes the arrangement of the articulated part 32 on the supporting element 30 possible. The wind deflector strip 50 is provided with an air-flow flute on its one longitudinal side against which mainly the air stream flows. In order to cover the articulated connection between the wiper arm 10 and the wiper blade 12 or rather between its articulated part 32 and to achieve a harmonic transition between the facing ends of the partial sections 52 of the wind deflector strip 50, a cap 60 is also part of the wiper lever 10 and its structure is supposed to be explained particularly on the basis of Figures 3, 4 and 6. It has a trough-shaped center section 62, whose trough base is largely removed, thereby yielding a passage opening 64 for the free end 14 of the wiper arm. As a result, the cap has two longitudinal walls 66 and 67, which are connected to one another at their one end by an end wall 68 and at their other ends by a cross strut 70. The two longitudinal walls 66, 67 of the cap 60, which is manufactured of an elastic plastic, are provided with elastically deflectable locking means on their longitudinal edges 72 that face the supporting element 30, which are embodied as locking noses 74 in the exemplary embodiment. In this connection, two locking noses 74 located at a distance ~~75~~³⁵ from one another are arranged on the one longitudinal wall 66. Located on the longitudinal edge 72 of the other longitudinal wall 67 is a locking nose 74, which is located—as related to the two locking noses on the longitudinal wall 66—between the two locking noses 74 of the longitudinal wall 66. In addition, arranged on each longitudinal wall are supporting or reinforcing ribs 76, which extend essentially from the passage opening 64 until close to the longitudinal edges 72 of the longitudinal walls 66, 67. On the ends of the supporting ribs 76 facing the edges 72, they are recessed to match the width of the supporting element 30 so that supports 78 are produced (Figure 6).